

REMARKS

Claims 1-14 are amended. Claims 1-14 are pending.

The amendments to the claims are based on the application as originally filed, so it is respectfully submitted that no new matter has been added. In particular, the amendments to claim 2 to recite a press switch (5) being “a potentiometer switch having discrete switching states” are supported on page 4, lines 4-5 and page 6, line 13 of the application as originally filed. In addition, the amendments to claim 6 reciting “a slope of a control function (OV) with respect to the force measured by the force sensor (8) is carried out depending upon an activation period of the second step and increases progressively within a time domain (Δt)” are supported on page 7, lines 19-20 and FIGS. 4a-4f.

In the office action, claims 1-14 were rejected under 35 U.S.C. § 112, second paragraph. Claims 1-14 have been amended in a manner believed to overcome the rejection under 35 U.S.C. § 112, second paragraph, and such amendments are supported by the application as originally filed, as described above. Therefore, reconsideration and withdrawal of the rejection of claims 1-14 under 35 U.S.C. § 112, second paragraph are respectfully requested.

In the office action, claims 1-3 and 5-10 were rejected under 35 U.S.C. § 102(e) in view of U.S. Patent Number 6,892,826 to Giardino; and claims 4 and 11-14 were rejected under 35 U.S.C. § 103(a) in view of Giardino.

Giardino describes a sensor 30 which is a time dependent force sensor for detecting the tangential impacts of the torque of a power-wrench used for a control system to turn off a motor at a pre-selected torque level; that is, the sensor has to be sensitive in the tangential direction.

On the contrary, the present invention recited in independent claims 1 and 5 uses a force sensor to measure the axial “pressing force (F)” of the tool pressing against the workpiece. The sensing of axial pressing force is not possible with the sensor 30 disclosed in Giardino, because the tangential component of a given force is always uncorrelated with any axial component of the force caused by the “principle of superposition” of forces and vectors. That is, tangential and axial components of a force are, by definition, different and independent of each other.

Regarding claim 5, although Giardino discloses a control process of a tool, on the contrary Giardino does not disclose or suggest a control process which operates in response to axial “pressing force (F)” of the tool pressing against the workpiece, as in the present invention.

Therefore, Giardino does not anticipate the present invention.

Furthermore, for the reasons set forth above, the present invention is not obvious in view of Giardino, since one having ordinary skill in the art would not look to Giardino which senses tangential components of force for the present invention which senses axial components of a pressing force of a tool against a workpiece. As noted above, the tangential component of a given force is always uncorrelated with any axial component of the force caused by the “principle of superposition” of forces and vectors, and so such tangential and axial components of a force are, by definition, different and independent of each other.

There is no suggestion in Giardino to detect or sense any axial component of the pressing force, and there is no need or motivation presented in Giardino to adapt the sensor 30 or other components of Giardino to detect or sense any axial component of the pressing force, as in the present invention.

Accordingly, independent claims 1 and 5 are patentable over Giardino.

Claims 2-4 and 6-14 depend from independent claims 1 and 5, and so include the recitation of claims 1 and 5, respectively. Therefore, for the reasons set forth above, claims 2-4 and 6-14 are also patentable over Giardino.

Therefore, claims 1-14 are patentable over Giardino, so reconsideration and withdrawal of the rejection of claims 1-14 are respectfully requested.

Accordingly, entry and approval of the present amendment and allowance of all pending claims are respectfully requested.

In case of any deficiencies in fees by the filing of the present amendment, the Commissioner is hereby authorized to charge such deficiencies in fees to Deposit Account Number 01-0035.

Respectfully submitted,



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